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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/588,696	06/07/2000	Yujiro Suzuki	325772017700	8631

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EXAMINER	
LEUNG, QUYEN PHAN	
ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/588,696

Applicant(s)

SUZUKI, YUJIRO

Examiner

Quyen P. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 02 July 2002.

2a) ☒ This action is FINAL.

2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-17 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s) _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. In response to applicant's amendment filed 7/2/02, claims 1, 3, 7, 9, 11 and 15 have been amended. Claims 1-17 are pending.

Response to Arguments

2. Applicant's arguments filed 7/2/02 have been fully considered but they are not persuasive. Applicant made the following arguments:
 - a. "Claim 1, as amended, clearly recites this feature of the invention as a thin film which is adapted to transmit light when irradiated and to block light when not irradiated. On the contrary, Kobayashi's device has a permanent hole in a masking layer 4 as an aperture of the device. All of the manufacturing methods described in the examples of Kobayashi either blow the masking layer 4 out or cause it to evaporate under vacuum. In every example, the size of the hole was determined by a scanning electron microscope observation. This clearly confirms that Kobayashi's hole in masking layer 4 is created by removing a portion of the masking layer 4 and cannot be returned to its original state. Creation of a permanent aperture by high power beam radiation, as in the case of Kobayashi, as described as undesirable in the specification of this application (page 3, lines 8-16) and is intended to be avoided by this invention."
 - b. "The masking layer of Kobayashi cannot block light when it is not irradiated with light, or any time once it is formed, because it has a permanent hole in the path of the light beam. The formation of the hole is irreversible."

c. "Although the claims of Kobayashi refer to the use of a laser for making the masking film transparent, Kobayashi does not describe any method for forming such a transparent film or its use as an aperture in the specification. All of the examples are devoted to the description of permanent holes."

d. "In the absence of any specific enabling disclosure of how to make the masking film transparent, persons of ordinary skill in the art would have recognized that the formation of the transparent masking film is also irreversible, and that the transparent portion of the masking film is a permanent aperture which cannot be returned to its original, non-transparent state."

In response to arguments a-c above, while it is not disagreed that Kobayashi teaches a thin film having a hole, Examiner asserts that Kobayashi also teaches the thin film as claimed by applicant. Note for example, Kobayashi's claim 4 and 5 which state the thin film being "removed or made optically transparent by exposure to the light emitted from said semiconductor laser body" and the thin film being "removed or made optically transparent through thermally physical action, chemical reaction, melting, evaporation, or diffusion." Since Kobayashi does not teach the removal of the thin film to the exclusion of the making of the thin film optically transparent by irradiation, applicant's argument is not found convincing.

In further response to c-d, Examiner disagrees with applicant's contention and asserts that, in col. 1 lines 25-54 and col. 2 lines 11-20, Kobayashi teaches a use for the transparent film and its use as an aperture in the specification.

Further Examiner asserts that Kobayashi does teach a method for forming such a transparent film, by stating the same method as applicant, which is to expose the thin film to the light emitted by the semiconductor laser (see Kobayashi's col. 2 lines 16-20). So applicant's arguments are not found convincing.

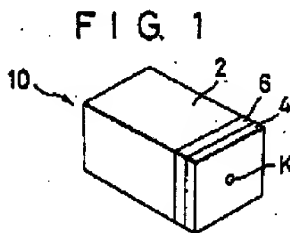
Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al (4,840,922). Kobayashi discloses the claimed invention. Figures 1 and 2 illustrate a light emitting element (2) that emits light from its exit surface; and a thin



film (4) disposed on the exit surface (cleavage plane). (Note that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.)

Regarding claim 1, see col. 2 lines 16-20 for the teaching of the thin film (4) being "adapted" for transmitting light when the thin film (4) is irradiated with light from the light

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emitting element (2). Further, see col. 2 lines 11-15 for the teaching of masking layer (4) being "adapted" for blocking light when the thin film (4) is not irradiated with light from the light emitting element (2).

Regarding claims 2 and 10, it is inherent that the Kobayashi's thin film (4) has the claimed physical property of changing from crystalline to amorphous when irradiated with light from the light emitting diode, because Kobayashi teaches the same materials as applicant. For example, in Kobayashi's col. 2 lines 21-30, Kobayashi teaches the thin film material being In. Likewise, on page 9 lines 10-14, applicant teaches a thin film of In and on page 8 lines 21-24, applicant teaches the thin film changing its state from crystalline to amorphous and gains a light transmitting property when heated.

Regarding claims 3 and 11, it is inherent that the Kobayashi's thin film (4) has the claimed physical property of returning to a crystalline state from an amorphous state when the light emission is stopped, because Kobayashi teaches the same materials as applicant. For example, in Kobayashi's col. 2 lines 21-30, Kobayashi teaches the thin film material being In. Likewise, applicant teaches a thin film of In, as evidenced on page 9 lines 10-14, and that that thin film, "when the emission of the laser light from the semiconductor laser 11 is stopped, the thin film 14 cools down naturally, and the light transmitting area 14a returns to a crystalline state from an amorphous state", as evidenced on page 10 lines 3-6.

Regarding claims 4-5 and 12-13, it is inherent that the thin film essentially consists of inorganic material having a melting point equal to or lower than 350°C or 150°C, because Kobayashi et al teaches the same inorganic film as taught by applicant.

For example Kobayashi et al's claim 6 names In and Sn as materials for the thin film (4). Note that these are materials also named by applicant for the thin film. See applicant's specification page 9 lines 10-12 for the teaching of In as the thin film and In having a melting point of about 130°C and see applicant's specification page 12 lines 3-8 for the teaching of Sn as the thin film and Sn having a melting point of about 232°C.

Regarding the thin film (4) essentially consisting of an organic material, as recited in claims 6 and 14, note Kobayashi et al's claim 24 for the teaching of organic materials: carbon, phthalocyanine and cyanine dye. It is noted that "low" melting point is subject to broad interpretation, e.g. between -1,000,000°C and 1,000,000°C, and therefore Kobayashi et al meets it.

Regarding claims 7 and 15, it is inherent that film (6) between the light exit surface (cleavage plane) and the thin film (4) is a heat diffusion preventing film, as claimed, because it is made of the same material taught by applicant—SiO₂--.

Regarding claims 8 and 16, note col. 2 lines 1-10 and line 36 for the teaching of the light emitting element (2) including a semiconductor laser device.

Regarding claim 9, see col. 2 lines 16-20 for the teaching of the thin film (4) being "adapted" to transmit light when the thin film (4) is heated (i.e. irradiated by exposure to the light emitted by the semiconductor laser 2). Further, see col. 2 lines 11-15 for the teaching of masking layer (4) being "adapted" to block light when the thin film (4) is not heated (i.e. not irradiated with light from the light emitting element 2).

Regarding claim 17, note col. 2 lines 16-20 for the teaching of the thin film (4) being heated by the light emitted from the light emitting element (2).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quyen P. Leung whose telephone number is (703) 308-0545. The examiner can normally be reached on 8:30-5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Quyen P. Leung
Primary Examiner
Art Unit 2828

QPL
September 30, 2002